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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/731,011	12/10/2003	Ulrich Wegmann	Q78854	6346

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SUGHRUE MION, PLLC  
2100 PENNSYLVANIA AVENUE, N.W.  
SUITE 800  
WASHINGTON, DC 20037

EXAMINER
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GUTIERREZ, KEVIN C

ART UNIT	PAPER NUMBER
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2851

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/01/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/731,011

Applicant(s)

WEGMANN, ULRICH

Examiner

Kevin Gutierrez

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-22 and 29-36 is/are allowed.
- 6) ☒ Claim(s) 23-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>5-26-06</u> | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments filed December 7, 2006 have been fully considered but they are not persuasive.

Regarding the remarks on pages 3-5, the Applicant argues that Shuster fails to disclose or suggest wherein at least one of a surface shape and a refractive index distribution of said correction surface deviates significantly from at least one of a surface shape and a refractive index distribution of a corresponding surface in a basic optical design of the optical imaging system. The Examiner respectfully disagrees. The surfaces 172, 173 of Schuster are utilized to obtain wavefront correction ([0102], lines 2-3). Therefore, these surfaces are interpreted as the correction surface. Their surface shape deviates significantly from at least one of the surface shape of a corresponding surface in a basic design ([0184]-[0199] and table 3, where their aspheric surfaces are significantly different from a basic design or a corresponding surface).

It is noted by the Examiner that Applicant has not clearly defined the "corresponding surface" in the optical imaging system, and further Applicant has not defined the surface shape and a refractive index distribution of a corresponding surface in the basic optical imaging system. Therefore, any distinct and unique shape or material of 172, 173 can be viewed as being deviated from basic optical design.

***Claim Objections***

2. Claim 23 is objected to because of the following informalities: Claim 23, line 6 - "a basic optical design" is a broad interpretation that is not clearly defined. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent; except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 23-24 and 26-28 are rejected under 35 U.S.C. 102(e) as being anticipated by Schuster (US 2003/0011894).

Regarding claim 23, Schuster discloses "an optical imaging system (figure 7) comprising a plurality of optical elements (group lens L1' and L2') and at least one pupil surface (AS2'; pupil plane) between an object plane (OB') and an image plane (IM'), a correction surface being provided on at least one surface ([102], lines 2-3), arranged in the vicinity of the pupil surface (AS2'), of an optical element that is close to the pupil (see fig. 7, where surfaces 172, 173 are located near pupil plane AS2'), wherein at least one of a surface shape and a refractive index distribution of said correction surface deviates significantly from at least one of a surface shape and a

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refractive index distribution of a corresponding surface in a basic optical design of the optical imaging system (see table 3 and [0184]-[0199], where surfaces 172, 173 have distinct differences in thickness, radius, and material), wherein the optical element (172) that is closes to the pupil (AS2') and has the correction surface is a refractive lens element ([102], lines 8-10)."

Regarding claim 24, Schuster discloses "wherein the correction surface is an aspherical correction surface ([102], lines 8-10)."

Regarding claims 26-27, Schuster discloses "wherein the correction surface bears an optical coating ([0023], lines 1-9, where an antireflection coating is applied)."

Regarding claim 28, Schuster discloses "wherein the optical imaging system is a microlithographic projection objective ([0044], lines 1-4)."

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schuster in view of the Non-Patent Literature document titled *Nanometer-Asphären: Wie herstellen und wofür?* - Hofmann et al. (1991).

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Schuster discloses a correction surface, but does not disclose "wherein the aspherical correction surface is a nanometer asphere."

However, it is known to the art as it is evident by the teaching of Hofmman et al. (second paragraph, lines 1-2). Thus, it would have been obvious to one ordinary skilled in the art at the time the invention was made to modify the correction surface of Schuster by having a nanometer asphere for at least the purpose reducing aberrations.

***Allowable Subject Matter***

7. Claims 1-22 and 29-36 are allowed.

***Conclusion***

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Gutierrez whose telephone number is (571)-272-5922. The examiner can normally be reached on Monday-Friday: 8:00 a.m. - 5:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diane Lee can be reached on (571)-272-2399. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kevin Gutierrez  
Examiner  
Art Unit 2851

February 26, 2007



**DIANE LEE**  
**SUPERVISORY PATENT EXAMINER**